Remarks/Arguments

Claims 1-30 are in the case. Reconsideration of this application is requested.

Rejection under 35 USC 103(a)

Claims 1-30 have been rejected under 35 USC 103(a) as being unpatentable over Groves et al. 3,627,871, Lukhovitsky et al. 3,709,804, Nakayabashi et al. 5,879,663, or Ghosh 6,149,927.

In the way of review, the following are aspects of the claimed invention:

Claim Number	Aspect
1-9, 23-25	An aqueous polymer emulsion resistant to biodeteriogenic microbe contamination.
10-19, 26-30	A method for preventing biodeteriogenic microbe contamination in a protective colloid stabilized polymer emulsion.
1-30	Aqueous protective colloid stabilized polymer emulsion containing little or no nonionic or anionic surfactants and little or no anionic substituents.
1-30	Cationic compound selected from the group consisting of a substituted guanidine salt, a polymeric cationic compound, and mixtures thereof, wherein the substituted guanidine salt is substituted with an alkyl, a cycloalkyl, or an aryl group containing 2 to 18 carbons.
1-30	Amount of cationic compound sufficient to prevent biodeteriogenic microbe contamination.
23-30	Amount of cationic compound is 10 to 400 ppm, based on the wet weight of polymer emulsion.
23-30	Cationic compound selected from the group consisting of a substituted guanidine salt, a substituted pyridinium salt, a tetrasubstituted ammonium salt, a polymeric cationic compound, and mixtures thereof, wherein the substituted guanidine salt and the substituted pyridinium salt are substituted with an alkyl, a cycloalkyl, or an aryl group containing 2 to 18 carbons and the tetrasubstituted ammonium salt is substituted with one or more of an alkyl, a cycloalkyl, and/or an aryl.

Rejection: Groves et al. (US 3,627,871)

Groves et al. was cited as disclosing polyvinylidene chloride and other polymeric emulsions, hydroxyethyl cellulose and polyvinyl acohol, cetylpryidium chloride, and benzalkonium chloride.

Response

Groves et al. disclose a therapeutic film-forming composition suitable for topical application. The composition can contain a polymer emulsion, a viscolizer, and antibiotics

such as gramicidin, neomycin, cetyl pyridinium chloride, and benzalkonium chloride. The emulsion is not stabilized by the viscolizer; the viscolizer is added to an already formed emulsion in order to thicken it into an ointment. The means of forming the polymer emulsion and the stabilizing system are not shown; the stabilizing system is unknown except for the examples. Polidene, which is cited as an appropriate polymer emulsion and used in the examples, is known to contain anionic and, sometimes, nonionic surfactants. Attached is copy of the product description, showing the surfactants in the product, at the Scott Bader Ltd website (http://www.scottbader.com/pub.nsf/Content/UK_SP_Search_Results?OpenDocument&KEYWORD=polidene&SUBMIT.X=17&SUBMIT.Y=9). Polidene, the preferred polymer emulsion cited by Groves et al. would not be an appropriate polymer emulsion for this invention. The use of Polidene as a preferred polymer emulsion teaches away from the claimed invention. There is therefore no motivation to use a colloid-stabilized polymer emulsion containing little or no nonionic or anionic surfactants and little or no anionic substituents for the polymer emulsion, based on the teachings of Groves et al.

Taken as a whole, Groves et al. would not have suggested the claimed invention (claims 1-30) . The obviousness rejection based on Groves et al. should therefore be withdrawn.

Rejection: Lukhovitsky et al. (US 3,709,804)

Lukhovitsky et al. was cited as teaching protective colloids, iogenic emulsifying agents, and polymers.

Response

Lukhovitsky et al. discuss protective colloids in the suspension method of forming vinyl chloride polymers, as background information. However, the suspension method is cited by the patentees as being disadvantageous because of the difficulties in effecting the process in a continuous fashion (col. 1, lines 61-63). The teaching is therefore away from use of protective colloids in forming an emulsion polymer. Instead, patentees teach use of ionogenic (ionic) emulsifying agents under the action of ionizing radiation to produce the emulsion polymer (col. 2, lines 39-49). The ionogenic emulsifying agents may be anion-active and cation-active (col. 2, lines 58-65). This teaching is also away from the claimed

invention. This reference does not teach or suggest the following aspects of the claimed invention:

- a protective colloid stabilized aqueous polymer emulsion in combination with a cationic compound;
- a protective colloid stabilized aqueous polymer emulsion containing little or no anionic or nonionic surfactants and little or no anionic substituents in combination with a cationic compound.

The teachings of Lukhovitsky et al. would not have suggested the claimed invention as recited in claims 1-30. The obviousness rejection based on the teachings of Lukhovitsky et al. should therefore be withdrawn.

Rejection: Nakayabashi et al. (US 5,879,663)

Nakabayashi et al. was cited as disclosing polyvinyl alcohol in col. 4, lines 65-66, polymers in the paragraph overlapping col. 6 and 7 and polyhexamethylenebiguanide hydrochloride in col. 12, lines 35-36.

Response

Nakabayashi et al. disclose a dental composition comprising (A) a low molecular weight compound, such as phosphoric acid, phosphate containing compounds, and carbonic acid compounds, which can produce a precipitate which is hardly soluble in water when it reacts with a calcium compound, (B) a calcium compound and/or (C) an aqueous polymer emulsion (abstract). The polymer emulsions suitable for the dental composition are disclosed at col. 6, line 60 to col. 8, line 61. There is no teaching or suggestion in Nakabayashi et al. of a colloid stabilized polymer emulsion, and many of the polymers listed as suitable for the dental composition contain anionic substituents which teaches away from the claimed invention. Component (A) is a low molecular weight compound which forms a precipitate when it reacts with the calcium compound (B) (col. 3, lines 49-62). When only component (A) is contained, a thickening agent such as polyvinyl alcohol, polyvinyl pyrrolidone and polyacrylic acid can be added to the solution of component (A) to increase its viscosity (col. 4, line 60 to col. 5, line 3). The polymer emulsion (C) is formed by emulsifying or dispersing a natural resin or a synthetic resin in water. The reference does not disclose stabilizing agents that are used in the polymer emulsions. Preferred polymers are those containing reactive groups which will react with the calcium compound (col. 7, line 9 to col. 8,

line 67). In order to react with the calcium compound, the reactive groups must be anionic and thus teaches away from the polymers of this invention.

This reference lacks a teaching or suggestion of the following aspects of the claimed invention:

- a protective colloid stabilized aqueous polymer emulsion in combination with a cationic compound;
- a protective colloid stabilized aqueous polymer emulsion containing little or no anionic or nonionic surfactants and little or no anionic substituents in combination with a cationic compound.

It is therefore submitted that the claimed invention (claims 1-30) would not have been obvious based on the disclosure of Nakabayashi et al. and the rejection should be withdrawn.

Rejection: Ghosh (US 6,149,927)

Ghosh was cited as revealing n-alkyl dimethylbenzylammonium chloride, cetyltrimethylammonium chloride, didecyldimethylammonium chloride, dodecylguanide hydrochloride and poly(hexamethylenebiguanide) hydrochloride in col. 3, lines 45-50, isothiazolines in col. 4, lines 28-40, biocide concentrations in paragraph overlapping col. 4 and 5, hydroxyethyl cellulose in Example 7, adhesives and latices in claim 9 and plasticizers and rheology modifiers in col. 7, lines 25-37.

Response

Ghosh discloses solid biocidal compositions containing biocidal compounds that do not rapidly release the biocidal compounds when added to a locus to be protected. Among the huge number of biocides that are listed at col. 2, line 52 to col. 4, line 39, it is possible to identify cationic compounds; however there is no suggestion in Ghosh that a cationic compound should be used or is preferable in colloid-stabilized polymer emulsions containing little or no nonionic or anionic surfactants or little or no anionic substituents. Ghosh, at col. 5, lines 33-55, indicates that the biocidal compositions can be used in a variety of loci, including adhesives, emulsions and dispersions, but there is no teaching regarding the type or properties of the emulsions with which cationic compositions should be mixed in order to prevent microbe contamination. The reference is lacking any teaching of a colloid-stabilized aqueous polymer emulsion containing little or no anionic or nonionic surfactants and little or no anionic substituents. It is also lacking any teaching of the types of colloid-stabilized

aqueous polymer emulsions with which a cationic biocidal composition should be mixed to prevent biodeteriogenic microbe contamination. Therefore, there would have been no movitivation provided by Ghosh to combine the aqueous polymer emulsion and cationic compound as recited in claims 1-30.

It is therefore submitted that the claimed invention would not have been obvious based on the disclosure of Ghosh and the rejection should be withdrawn.

None of the references cited by the Examiner disclose or suggest all aspects of the claimed invention. Therefore the rejection of claims 1-30 based on the disclosure of Groves et al. 3,627,871, Lukhovitsky et al. 3,709,804, Nakayabashi et al. 5,879,663, or Ghosh 6,149,927 should be withdrawn.

Based on the above remarks, reconsideration of this application and its early allowance is requested.

Respectfully submitted,

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